

NASA TECH BRIEF

Marshall Space Flight Center



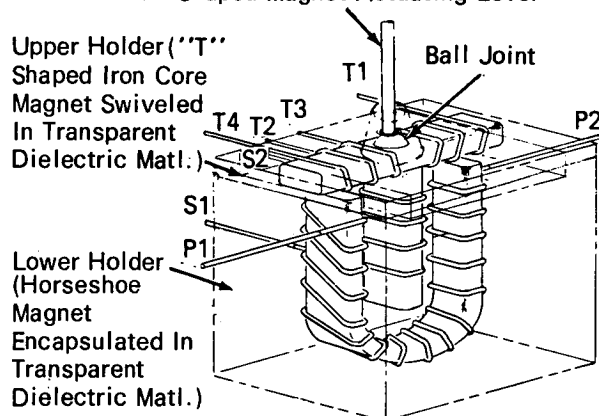
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Small Size Transformer Provides High Power Regulation with Low Ripple and Maximum Control

The problem:

To devise a means of providing extremely high power regulation with low ripple and maximum control of linearity, without using the numerous electronic components, i.e., transformers, chokes, etc.,

"T" Shaped Magnet Actuating Lever



τ Tau Upsilon Transformer

now needed. The new technique should reduce the physical size of the drawer assembly, as well as its design and manufacturing cost.

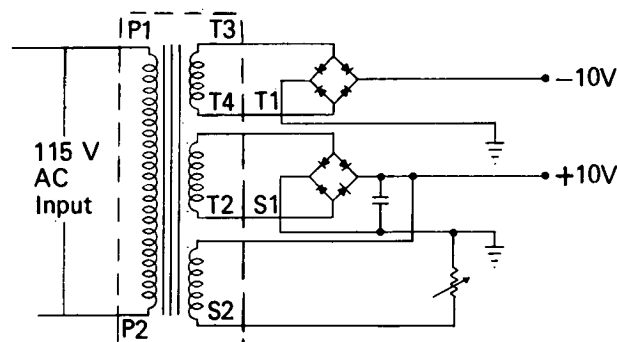
The solution:

A single, variable, transformer/choke device (see fig.) which does the work of several.

How it's done:

In the concept proposed, two electromagnets, one U-shaped and one T-shaped, would be arranged in a component holder such that transformer interaction occurs. The interaction is varied through the use of a level attached to the T section and swiveled in a ball joint. The copper wire is wound

around an iron core in both cases, with three coils of the T-shaped secondary interacting with the U-shaped primary. This device provides high regulation of power, voltage, current and impedance, while maintaining maximum control of linearity and



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ensuring extremely low ripple. Another important feature is that nulling can be controlled to a very fine degree. The device eliminates the use of multiple electronic components, allows reduction of transformer to micro-micro size, and has only two movable parts.

Note:

Requests for further information may be directed to:

Technology Utilization Officer
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(continued overleaf)

Patent status:

No patent action is contemplated by NASA.

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